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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/705,775

Applicant(s)

MAEDA ET AL.

Examiner

Robert R. Rainey

Art Unit

4136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 0207 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. The correction of the dependency of claim 15 overcomes the objection to claims 15, 16 and 17 concerning failure to further limit the parent claims.

2. The objection to claim 18 concerning failure to further limit the parent claims is maintained. Applicant argued that the recitation of “data signal line sets” further limits claim 11. Claim 18 states that “... data signal line groups are data signal line sets ...”. There is no patentably distinct difference between the terms “groups” and “sets” in the context of the claim. Claim 18 does go on to define a data signal line set as “... made up of a predetermined number of the data signal lines corresponding to color signals contained in the video signal ...”. Claim 11, as amended, defines a data signal line group as “comprising a predetermined number of adjacent data signal lines sequentially connected to each divisional video signal line so as to respectively correspond to the color signals”. The definition given in claim 11 is narrower than the definition given in claim 18. Thus, neither the change of terminology from groups to sets nor the new definition given further limits the claim. See the “Objections” section below.

3. The amendments to claims 1, 2, 3, 11, 19 and 21 effectively overcome the objection to them regarding the antecedent of “whose”.

4. The objection to claim 4 is withdrawn. After further review it is clear that if one has more than two groups in a block the two modes could be different even though the recited limitations

Art Unit: 4136

do not *require* them to be different. Claim 4 as amended no longer turns on the definition of “each”, however, the claim still recites two driving modes that seem to be overlapping. In first driving the data lines of both one and another group are driven at the same time, i.e. at least two groups are driven at the same time. In second driving all the groups are driven at the same time. Since there is no reference to a particular block in mode two, mode two could apply to all groups in a block being driven or all groups in all blocks being driven.

5. The objections to claims 10 and 18 regarding the terms “data signal line groups” and “data signal line sets” are withdrawn. The arguments provided were not persuasive but the applicant may use the terms interchangeably if desired. As a note, however, the examiner believes that the actual intent of claim 10 may be to claim something quite different than what it actually says; something as different as, by way of example only, to add limitations regarding color signals perhaps in that each data signal line is comprised of a set of color data signal lines and so forth. The examiner would struggle to find an example that might apply to claim 18 because claim 11 already includes an attempt to claim the invention with explicit reference to color signals.

6. Acknowledgment is made of receipt of replacement drawing sheets for drawing sheets 11 and 20-25. These sheets are now appropriately labeled “Prior Art” and the objection to the drawings is effectively overcome.

Art Unit: 4136

7. The objection to claims 11 and 21 regarding the antecedent basis of the phrase “said data signal line group” is withdrawn. After further review it seems that it is sufficiently clear that this reference is defining each group recited in the phrase “data signal line groups”.

8. The amendment of claims 5, 6, 8, 9, 13, 14, 16, and 17 to replace the term “shift resisters” with the term “shift registers” effectively overcomes the objection to these claims with respect to said objection.

9. Applicant’s arguments regarding the rejection of claims 1-4, 7, 10-12, 15, 18, 19 and 21 under U.S.C. 102(b) over Japanese Patent Application No. JP2000-181394 (“Sunao”) were fully considered and found not to be persuasive. All rejections are maintained. Applicant amended claims 1-4, 7, 11, 12, 15, 19 and 21 and directed all arguments regarding the rejection of the claims to the claims as amended. Regarding the applicants arguments, see the rejections below of the claims as amended and the discussion below:

Applicant argues that *Sunao* shows adjacent data signal lines connected to different video signal lines whereas the instant application claims a predetermined number of adjacent data signal lines sequentially connect to each video signal line. This is not persuasive because *Sunao* clearly shows, for example, adjacent data signal lines S1 to S4 connected to video signal line V1 (see for example Fig. 1).

Applicant argues that *Sunao*’s motivation is different than that of the instant application. This is not persuasive since motivation is not considered for 102(b)

Art Unit: 4136

rejections. Also, the motivation need not be the same even for an obviousness type rejection.

10. Applicant's arguments regarding the rejection of claims 5, 6, 8, 9, 13, 14, 16, 17, 20 and 22 under U.S.C. 103(a) were fully considered and found not to be persuasive. All rejections are maintained. Applicant argued that the inappropriateness of the application of *Sunao* to the parent claims renders the rejections ineffective. Since applicant's arguments regarding the parent claims were not persuasive, this argument is also not persuasive.

### **Claim Objections**

11. **Claim 18** is objected to because of the following informalities:

**Claims 18** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 18 states that "... data signal line groups are data signal line sets ...". There is no patentably distinct difference between the terms "groups" and "sets" in the context of the claim. Claim 18 does go on to define a data signal line set as "... made up of a predetermined number of the data signal lines corresponding to color signals contained in the video signal ...". Claim 11, as amended, defines a data signal line group as "comprising a predetermined number of adjacent data signal lines sequentially connected to each divisional

Art Unit: 4136

video signal line so as to respectively correspond to the color signals". The definition given in claim 11 is narrower than the definition given in claim 18. Thus, neither the change of terminology from groups to sets nor the new definition given further limits claim 11. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. **Claims 1, 2, 3, 4, 7, 10, 11, 12, 15, 18, 19, and 21** are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application No. *JP2000-181394* ("*Sunao*").

Regarding **Claim 1**, *Sunao* discloses a data signal line driving method for driving a plurality of data signal lines (for example, "S1-S4n" in Fig 1 and paragraph 0025) respectively so as to fetch (see for example, Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4 with operation described in Figs 4-7, 9 and 10) a multiphased video signal (for example, "V1-Vn" in Figs 4-7, 9, and 10) via a plurality of video signal lines (for example, "V1-Vn" in Fig 1 and paragraph 0025) into the data signal lines, said method comprising the steps of: gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each video signal line (for example 4 data signal lines, i.e. S1-

S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1), the predetermined number of adjacent data signal lines being equal to the number of the video signal lines (see for example Fig. 1 with n=4), a number of data signal line groups equal to the number of video signal lines being regarded as a single block (data signal line groups 1-n are "gathered" that is treated as a single block see for example Figs 4-7, 9, or 10); and fetching the video signal from the video signal lines into the data signal lines in each block (see for example Figs 4-7, 9, or 10).

Regarding **Claim 2**, *Sunao* discloses a data signal line driving method for driving a plurality of data signal lines (see for example Fig 12) respectively so as to (i) multiphase a video signal having a plurality of color signals (see for example VG1,VB1,VR1 ... of Fig 12) and (ii) fetch the video signal into the data signal lines, said method comprising the steps of: causing a plurality of divisional video signal lines, divided so as to respectively correspond to the color signals, to constitute each of the video signal lines ("V1-Vn" in Fig 1 and paragraph 0025 as modified by Fig 12 and paragraph 0101); gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each divisional video signal line so as to respectively correspond to the color signals (for example, 4 data signal lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1 and Fig 12 and paragraph 0101 extend this to color signals), the predetermined number of adjacent data signal lines being equal to the number of the video signal lines (see for example Fig. 1 with n=4 as



modified by Fig 12 and paragraph 0101), said data signal line group being regarded as a single block (for example, data signal line groups 1-n are “gathered” that is treated as a single block as shown in Figs 4-7, 9, and 10 and Fig 12 and paragraph 0101 extend this to color); and fetching the video signal from the video signal lines into the data signal lines in each block (see for example Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4 with operation described in Figs 4-7, 9 and 10 expanded to color by Fig 12 and paragraph 0101).

Regarding **Claim 3**, *Sunao* discloses a data signal line driving circuit, which drives a plurality of data signal lines (see for example “S1-S4n” in Fig 1 and paragraph 0025) respectively so as to fetch (see for example Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4 with operation described in Figs 4-7, 9) a multiphased video signal (see for example “V1-Vn” in Figs 4-7, 9, and 10) via a plurality of video signal lines into the data signal lines, comprising: data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each video signal line (see for example that 4 data signal lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1); and a video signal fetching section (see for example Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4) for fetching the video signal from the video signal lines into the data signal lines in each block when gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each video signal line (see

for example that 4 lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1), the predetermined number of adjacent data signal lines being equal to the number of the video signal lines (see for example Fig. 1 with n=4), a number of data signal line groups equal to the number of video signal lines being regarded as a single block (data signal line groups 1-n are "gathered" that is treated as a single block see for example Figs 4-7, 9, or 10).

Regarding **Claims 4 and 7**, *Sunao*, in addition to the rejection of claim 3, discloses that the video signal fetching section includes drive switching means (claim 3) or a drive switching circuit (claim 7) for switching between (i) first driving in which the data signal lines of one of the data signal line groups in the block and the data signal lines of another one of the data signal line groups in the block are driven at the same time and (ii) second driving in which all the data signal lines of the data signal line groups are driven at the same time (Fig 1 decoder 140 and sampling signals X1, X2, X3, X4 allow any combination of the four sampling switches 131 in each data signal line group to sample the group's respective video signal clearly covering one per data signal line group and all signal lines in the signal line groups. Fig 6 illustrates all signal lines in the groups sampling at the same time. Both modes i and ii are covered by all signal lines sampling at the same time because mode i says that one and another data signal line groups in a block, i.e. at least two data signal line groups in a block, are driven at the same time and mode ii says that all data signal line groups are driven at the same time.).

Regarding **Claim 10**, *Sunao*, in addition to the rejection of claim 3, discloses that the data signal line groups are data signal line sets each of which is made up of a predetermined number of data signal lines respectively corresponding to color signals contained in the video signal fetched into the data signal lines (Fig 1 and paragraph 0028 as extended to color by Fig 12 and paragraph 0101).

Regarding **Claim 11**, *Sunao* discloses a data signal line driving circuit, which drives a plurality of data signal lines respectively so as to (i) multiphase a video signal having a plurality of color signals (see for example VG1,VB1,VR1 etc. of Fig 12) and (ii) fetch the video signal into the data signal lines, comprising: a plurality of divisional video signal lines, divided so as to respectively correspond to the color signals, which constitute each of the video signal lines ("V1-Vn" in Fig 1 and paragraph 0025 as modified by Fig 12 and paragraph 0101); and a video signal fetching section (Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4 with operation described in Figs 4-7, 9 and 10 expanded to color by Fig 12 and paragraph 0101) for fetching the video signal from the video signal lines into the data signal lines in each block when gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each divisional video signal line so as to respectively correspond to the color signals (for example, 4 data signal lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1 and Fig 12 and paragraph 0101 extend this to color signals), the predetermined number of adjacent data signal lines being equal to the number of the

video signal lines (see for example Fig. 1 with  $n=4$  as modified by Fig 12 and paragraph 0101), said data signal line group being regarded as a single block (see for example that data signal line groups 1-n are “gathered” that is treated as a single block as shown in Figs 4-7, 9, and 10 and Fig 12 and paragraph 0101 extend this to color).

Regarding **Claims 12 and 15**, *Sunao*, in addition to the rejection of claim 11, discloses that the video signal fetching section includes drive switching means (claim 12) or a drive switching circuit (claim 15) for switching between (i) first driving in which the data signal lines of one of the data signal line groups in the block and the data signal lines of another one of the data signal line groups in the block are driven at the same time and (ii) second driving in which all the data signal lines of the data signal line groups are driven at the same time (Fig 1 decoder 140 and sampling signals X1, X2, X3, X4 allow any combination of the four sampling switches 131 in each data signal line group to sample the group’s respective video signal clearly covering one per data signal line group and all signal lines in the signal line groups. Fig 6 illustrates all signal lines in the groups sampling at the same time. Both modes i and ii are covered by all signal lines sampling at the same time because mode i says that one and another data signal line groups in a block, i.e. at least two data signal line groups in a block, are driven at the same time and mode ii says that all data signal line groups are driven at the same time.).

Regarding **Claim 18**, *Sunao*, in addition to the rejection of claim 11, discloses that the data signal line groups are data signal line sets each of which is made up of a

predetermined number of the data signal lines corresponding to color signals contained in the video signal fetched into the data signal lines (see for example Fig 1 and paragraph 0028 as extended to color by Fig 12 and paragraph 0101).

Regarding **Claim 19**, *Sunao* discloses a display device, comprising: a display panel (paragraph 0105 and Figs. 13 and 14) which includes (i) a plurality of data signal lines (“S1-S4n” in Fig 1 and paragraph 0025), (ii) a plurality of scanning signal lines provided so as to cross the data signal lines (G1 to Gm in Fig 1 and paragraph 25), and (iii) pixels provided on intersections of the data signal lines and the scanning signal lines (118 in Fig 1 and paragraph 0025), a video signal for displaying an image being fetched from the data signal lines into the pixels in synchronism with a scanning signal supplied from the scanning signal lines (Figs. 1 and 4 and paragraph 0033), said video signal being retained (paragraph 0036 describes “a picture signal...written in a pixel”); a data signal line driving circuit for outputting the video signal to the data signal lines in synchronism with a predetermined timing signal (Figs. 1 and 4 and paragraph 0036); and a scanning signal line driving circuit for outputting the scanning signal to the scanning signal lines in synchronism with a predetermined timing signal (Figs. 1 and 4 and paragraph 0033), said video signal being multiphased (“V1-Vn” in Figs 4-7, 9, and 10), and being supplied to the data signal lines via a plurality of video signal lines (“V1-Vn” in Fig 1 and paragraph 0025), wherein the data signal line driving circuit, which drives said plurality of data signal lines respectively so as to fetch the multiphased video signal via said plurality of video signal lines into the data signal lines, includes: data signal line groups, each group

comprising a predetermined number of adjacent data signal lines sequentially connected to each video signal line (see for example that 4 data signal lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1); and a video signal fetching section (see for example Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4) for fetching the video signal from the video signal lines into the data signal lines in each block when gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each video signal line (see for example that 4 lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1), the predetermined number of adjacent data signal lines being equal to the number of the video signal lines (see for example Fig. 1 with  $n=4$ ), a number of data signal line groups equal to the number of video signal lines being regarded as a single block (data signal line groups 1-n are "gathered" that is treated as a single block see for example Figs 4-7, 9, or 10).

Regarding **Claim 21**, *Sunao* discloses a display device, comprising: a display panel (paragraph 0105 and Figs. 13 and 14) which includes (i) a plurality of data signal lines ("S1-S4n" in Fig 1 and paragraph 0025), (ii) a plurality of scanning signal lines provided so as to cross the data signal lines (G1 to Gm in Fig 1 and paragraph 25), and (iii) pixels provided on intersections of the data signal lines and the scanning signal lines (118 in Fig 1 and paragraph 0025), a video signal for displaying an image being fetched from the data signal lines into the pixels in synchronism with a scanning signal supplied

from the scanning signal lines (Figs. 1 and 4 and paragraph 0033), said video signal being retained (paragraph 0036 describes “a picture signal...written in a pixel”); a data signal line driving circuit for outputting the video signal to the data signal lines in synchronism with a predetermined timing signal (Figs. 1 and 4 and paragraph 0036); and a scanning signal line driving circuit for outputting the scanning signal to the scanning signal lines in synchronism with a predetermined timing signal (Figs. 1 and 4 and paragraph 0033), said video signal being multiphased (“V1-Vn” in Figs 4-7, 9, and 10), and being supplied to the data signal lines via a plurality of video signal lines (“V1-Vn” in Fig 1 and paragraph 0025 as modified by Fig 12 and paragraph 0101), wherein the data signal line driving circuit, which drives a plurality of data signal lines respectively so as to (a) multiphase the video signal having a plurality of color signals and (b) fetch the video signal into the data signal lines, includes: a plurality of divisional video signal lines, divided so as to respectively correspond to the color signals, which constitute each of the video signal lines (“V1-Vn” in Fig 1 and paragraph 0025 as modified by Fig 12 and paragraph 0101); and a video signal fetching section (Fig 1 sampling circuit 130, switch 131, decoder 140 and sampling signals X1...X4 with operation described in Figs 4-7, 9 and 10 expanded to color by Fig 12 and paragraph 0101) for fetching the video signal from the video signal lines into the data signal lines in each block when gathering data signal line groups, each group comprising a predetermined number of adjacent data signal lines sequentially connected to each divisional video signal line so as to respectively correspond to the color signals (for example, 4 data signal lines, i.e. S1-S4 to V1, S4-S8 to V2, ... S4(n-3)-S4(n) to Vn, are shown sequentially connected to each video signal line in Fig 1 and Fig

12 and paragraph 0101 extend this to color signals), the predetermined number of adjacent data signal lines being equal to the number of the video signal lines (see for example Fig. 1 with  $n=4$  as modified by Fig 12 and paragraph 0101), said data signal line group being regarded as a single block (see for example that data signal line groups 1-n are “gathered” that is treated as a single block as shown in Figs 4-7, 9, and 10 and Fig 12 and paragraph 0101 extend this to color).

14. **Claims 5, 6, 8, 9, 13, 14, 16, 17, 20, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over published Japanese Patent Application No. *JP2000-181394* (“*Sunao*”) in view of applicants admitted prior art (“*APArt*”) and *U.S. Patent No. 5,781,171* (“*Kihara*”).

As to **claims 5 and 6**, in addition to the rejection of claim 4 over *Sunao*, *Sunao* further discloses the use of shift registers to generate timing signals very similar to those used for fetching video signals. Referring to Fig 4 of *Sunao* see the similarities between the timing pulses X1 and X2 that cause the video signals to be fetched from the video signal lines to the data signal lines and the signals G1 and G2 for the generation of which *Sunao* teaches the use of shift registers. *Sunao* further discloses drive switching means switches between the first driving and the second driving so that the number of the shift registers that operate is varied in switching between the first driving and the second driving and further stopping operation of the shift register which is not required in driving after switching the drive switching means between the first driving and the second driving (claim 6). (See paragraph 0014 in which is the teaching to “..stop that part and power consumption” referring to a shift register stage that is not needed because of a



reduction in the number of required outputs when a lower resolution driving mode is selected.)

*Sunao* does not expressly disclose a video signal fetching section that includes one or more shift registers for generating a timing pulse causing the video signal to be fetched from the video signal lines to the data signal lines since *Sunao* limits specific mention of shift registers to generating scan line timing signals.

*Kihara* discloses the use of shift registers to control sampling of signals into data signal lines (see for example items 200, 210 and 260 of Fig. 1)

*APArt* discloses a video signal fetching section that includes one or more shift registers for generating a timing pulse causing the video signal to be fetched from the video signal lines to the data signal lines. See for example Figure 22.

*Sunao* and *APArt* are analogous art because they are from the same field of endeavor, which is video display and seek to solve the same problem, which is to reduce power consumption when switching from display of higher to lower-resolution video signals.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to modify *Sunao* according to the well known practice of using shift registers to generate a timing pulse causing the video signal to be fetched from the video signal lines to the data signal lines and to include means to vary the number of shift registers used and even stop the operation of unneeded shift registers according to the resolution as taught by *Sunao*. The suggestion/motivation would have been that given by *Sunao*, which is to lower the power consumption (see Abstract and paragraph 0014).

**Claims 8 and 9**, are identical to claims 5 and 6 except for the substitution of the word “circuit” for “means” (“drive switching circuit” in claims 8 and 9 versus “drive switching means” in claims 5 and 6) and are rejected using the same arguments as used for claims 5 and 6.

As to **claims 13 and 14**, in addition to the rejection of claim 12 over *Sunao*, *Sunao* further discloses the use of shift registers to generate timing signals very similar to those used for fetching video signals. Referring to Fig 4 of *Sunao* see the similarities between the timing pulses X1 and X2 that cause the video signals to be fetched from the video signal lines to the data signal lines and the signals G1 and G2 for the generation of which *Sunao* teaches the use of shift registers. *Sunao* further discloses drive switching means switches between the first driving and the second driving so that the number of the shift registers that operate is varied in switching between the first driving and the second driving and further stopping operation of the shift register which is not required in driving after switching the drive switching means between the first driving and the second driving (claim 14). (See paragraph 0014 in which is the teaching to “...stop that part and power consumption” referring to a shift register stage that is not needed because of a reduction in the number of required outputs when a lower resolution driving mode is selected.)

*Sunao* does not expressly disclose a video signal fetching section that includes one or more shift registers for generating a timing pulse causing the video signal to be

fetches from the video signal lines to the data signal lines since *Sunao* limits specific mention of shift registers to generating scan line timing signals.

*Kihara* discloses the use of shift registers to control sampling of signals into data signal lines (see for example items 200, 210 and 260 of Fig. 1)

*APArt* discloses a video signal fetching section that includes one or more shift registers for generating a timing pulse causing the video signal to be fetched from the video signal lines to the data signal lines. See for example Figure 22.

*Sunao* and *APArt* are analogous art because they are from the same field of endeavor, which is video display and seek to solve the same problem, which is to reduce power consumption when switching from display of higher to lower-resolution video signals.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to modify *Sunao* according to the well known practice of using shift registers to generate a timing pulse causing the video signal to be fetched from the video signal lines to the data signal lines and to include means to vary the number of shift registers used and even stop the operation of unneeded shift registers according to the resolution as taught by *Sunao*. The suggestion/motivation would have been that given by *Sunao*, which is to lower the power consumption (see Abstract and paragraph 0014).

**Claims 16 and 17**, are identical to claims 13 and 14 except for the substitution of the word “circuit” for “means” (“drive switching circuit” in claims 16 and 17 versus

“drive switching means” in claims 13 and 14) and are rejected using the same arguments as used for claims 13 and 14.

15. **Claims 20, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over published Japanese Patent Application No. *JP2000-181394* (“*Sunao*”) in view of *U.S. Patent No. 5,781,171* (“*Kihara*”).

As to **claims 20 and 22**, in addition to the rejections of claims 19 and 21 respectively over *Sunao*:

*Sunao* does not expressly disclose the data signal line driving circuit, the scanning signal line driving circuit, and the pixels formed on the same substrate.

*Kihara* discloses the data signal line driving circuit, the scanning signal line driving circuit, and the pixels formed on the same substrate (see Fig. 1 and paragraphs at column 6 lines 31-34 and column 11 line 62 to column 12 line 5).

*Sunao* and *Kihara* are analogous art because they are from the same field of endeavor, which is display drive.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to modify the device described in *Sunao* such that the data signal line driving circuit, the scanning signal line driving circuit, and the pixels are formed on the same substrate as taught by *Kihara*. The suggestion/motivation would have been to reduce cost. *Kihara* does not provide motivation directly for the integrated structure but refers to it as the “so-called driver integrated structure” (see column 6, line 32) implying

Art Unit: 4136

that this type of structure is one of well known value. Since integrating multiple devices onto a single substrate is a well know way to reduce cost, one of ordinary skill in the art at the time of the invention would have recognized its value.

### ***Conclusion***

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Rainey whose telephone number is (571) 270-3313. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on (571) 272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4136

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/RR/



11/1/07  
**DERRICK W. FERRIS**  
**SUPERVISORY PATENT EXAMINER**